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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,601	05/09/2001	Timothy W. Skszek	POM-12102/29	2583

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Gifford, Krass, Groh  
280 N. Old Woodward Ave., Suite 400  
Birmingham, MI 48009

EXAMINER

FULLER, ERIC B

ART UNIT	PAPER NUMBER
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1762

10

DATE MAILED: 03/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/851,601

Applicant(s)

SKSZEK ET AL.

Examiner

Eric B Fuller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Newly submitted claims 6 –10 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

The inventions are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, a process that does not optically monitor the physical dimensions of the tooling during fabrication may be used to make a product that is patentably identical to that of claims 6 – 10.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 6 – 10 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch et al. (US 6,122,564) in view of Kar et al. (US 6,203,861 B1).

In column 2, lines 36-50, Koch teaches all the limitations to claim 1, except that a first powder is deposited in a first region requiring high thermal or wear resistance and a second powder is deposited in a second region requiring high strength or impact resistance. However, it is taught that the constituency of the powder feed may be varied in accordance with the design criteria (column 6, lines 30-38). Additionally, Kar teaches that designs are known that require the powder composition to be varied such that one region may have high strength and another region may have high thermal resistance. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to vary the composition such that one region may have high strength and another region may have high thermal resistance with a reasonable expectation of success, since Koch teaches the modification is possible and Kar teaches the modification is desired in the art.

The limitations of claim 2 are taught in column 9, lines 50-62.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeanette et al. (US 6,046,426) in view of Kar et al. (US 6,203,861 B1), or vice versa.

Jeanette teaches the limitations of claim 1 in column 2, lines 11-56. Additionally, it is taught that a melt pool may be formed (column 3, lines 55-60), a description of the article is provided to the CAD (column 9, lines 43-45), and that the article is optically

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monitored for feedback (column 8, lines 28-40). Jeanette does not explicitly teach that the first powder is deposited in a first region requiring high thermal or wear resistance and a second powder is deposited in a second region requiring high strength or impact resistance. However, Kar teaches that it is known to vary the powder composition such that one region may have high strength and another region may have high thermal conductivity (equivalent to resistance). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to vary the composition such that one region may have high strength and another region may have high thermal resistance with a reasonable expectation of success, since the processes are similar and Kar teaches the modification is desired in the art.

Kar teaches a process of manufacturing 3-D objects by a laser deposition method. Metal particles are directed to the substrate and the laser is used to melt the particles into the object (column 4, lines 7-55). The object created may be a tool for die-casting (column 2, line 61; column 1, lines 55-60). The deposition is graded by depositing different materials in different areas (column 3, line 1-8). A description is provided to a computer controller (column 2, lines 60-63). The physical dimensions of the article are optically monitored for feedback control (column 4, lines 17-20). The reference fails to explicitly teach that a melt pool is formed. However, Jeanette teaches that having powdered material melt in flight versus having the powder fed into a melt pool are obvious variants of each other to one skilled in the art and would result in similar results (column 3, lines 55-60). Therefore, to form a melt pool of in the process of Kar would have been obvious at the time the invention was made to a person having

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ordinary skill in the art with an expectation of achieving similar results, as Jeanette teaches this is so.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koch et al. (US 6,122,564) in view of Kar et al. (US 6,203,861 B1), as applied to claim 1 above, and further in view of Singer et al. (US 5,875,830).

Koch in view of Kar teach a method of producing a tool that reads on the limitations of claim 1, as shown above. The references fail to explicitly teach that the tool comprises a gate area and the first material is deposited in relation to the gate area. However, Singer teaches that tools typically comprise gate areas and that materials having high thermal resistance is used in areas around the gate and materials of high strength are used in areas near the working face of the tool (areas where it opens and closes). This is done to increase the life of the tool, as it is resistant to wear and heat damage in the areas where it is most susceptible to these types of damage, and to increase the efficiency of heat transfer during use (column 3, lines 15-41). Therefore, it would have been obvious to include a gate area and an interface that opens and closes in the tool produced by the above-mentioned references with a reasonable expectation of success, as Singer teaches tools generally comprise these elements. To use the first material in areas around the gate and to use the second material around the interface would have been obvious at the time the invention was made to a person having ordinary skill in the art, as Singer teaches this increases thermal conductivity during use and would act increase the life of the tool.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeanette et al. (US 6,046,426) in view of Kar et al. (US 6,203,861 B1), or vice versa, as applied to claim 1 above, and further in view of Singer et al. (US 5,875,830).

Jeanette in view of Kar, or Kar in view of Jeanette, teach a method of producing a tool that reads on the limitations of claim 1, as shown above. The references fail to explicitly teach that the tool comprises a gate area and the first material is deposited in relation to the gate area. However, Singer teaches that tools typically comprise gate areas and that materials having high thermal resistance is used in areas around the gate and materials of high strength are used in areas near the working face of the tool (areas where it opens and closes). This is done to increase the life of the tool, as it is resistant to wear and heat damage in the areas where it is most susceptible to these types of damage, and to increase the efficiency of heat transfer during use (column 3, lines 15-41). Therefore, it would have been obvious to include a gate area and an interface that opens and closes in the tool produced by the above-mentioned references with a reasonable expectation of success, as Singer teaches tools generally comprise these elements. To use the first material in areas around the gate and to use the second material around the interface would have been obvious at the time the invention was made to a person having ordinary skill in the art, as Singer teaches this increases thermal conductivity during use and would act increase the life of the tool.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koch et al. (US 6,122,564) in view of Kar et al. (US 6,203,861 B1), as applied to claim 1, in further view of Singer et al. (US 5,875,830), as applied to claim 3, in view of Thompson (Handbook).

Koch in view of Kar in further view of Singer has been shown that it would have been obvious to create a tool that uses a high thermal conductive material in gate areas and a high strength material in non-gate areas, by a process that reads on claim 1. The references fail to teach that first material is H19 steel and the second material is H13 steel. However, Thompson teaches that H19 steel and H13 steel have the characteristics that are desired of the first and second materials, respectively. Therefore, it would have been obvious to use these materials with an expectation of success, as Thompson teaches that these materials possess the desired characteristics.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeanette et al. (US 6,046,426) in view of Kar et al. (US 6,203,861 B1), or vice versa, as applied to claim 1, in further view of Singer et al. (US 5,875,830), as applied to claim 3, in view of Thompson (Handbook).

Jeanette in view of Kar, or vice versa, in further view of Singer has been shown that it would have been obvious to create a tool that uses a high thermal conductive material in gate areas and a high strength material in non-gate areas, by a process that reads on claim 1. The references fail to teach that first material is H19 steel and the



second material is H13 steel. However, Thompson teaches that H19 steel and H13 steel have the characteristics that are desired of the first and second materials, respectively. Therefore, it would have been obvious to use these materials with an expectation of success, as Thompson teaches that these materials possess the desired characteristics.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 20 of U.S. Patent No. 6,122,564 in view of Kar et al (US 6,203,861 B1).

Claim 20 of the patent teaches all the limitations of claim 1 of the present invention, except that a first powder is deposited in a first region requiring high thermal or wear resistance and a second powder is deposited in a second region requiring high strength or impact resistance. However, Kar teaches that designs are known that

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require the powder composition to be varied such that one region may have high strength and another region may have high thermal resistance. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to vary the composition such that one region may have high strength and another region may have high thermal resistance with a reasonable expectation of success, since both processes are similar and Kar teaches the modification is desired in the art.

### ***Response to Arguments***

Applicant argues that Kar fails to teach feedback control. This is not found persuasive. Column 4, lines 17-21 explicitly teaches a visual feature and geometry recognition system that records, examines, slices, and runs the computer controlled system for parts creation. This reads on the optically monitoring the piece for feedback control

All other arguments are moot in view of the new grounds of rejection that have been applied in view of the applicant's amendments.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Duley et al. (US 5,659,479) and Poullos et al. (US 5,409,537) both teach optical monitoring for feedback control of laser deposition processes.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B Fuller whose telephone number is (703) 308-6544. The examiner can normally be reached on Mondays through Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached at (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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EBF

March 17, 2003



SHRIVE P. BECK  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 1700